

Abstract

A method and system for detecting a position of a metallic object are disclosed. The method includes (a) exciting a coil with an electrical signal to produce an electromagnetic field enveloping the object, (b) allowing a frequency of the electrical signal to be at the resonant frequency of the coil as affected by the object, and (c) adjusting a control signal controlling a characteristic of the electrical signal so that the characteristic substantially equals a predetermined standard level. The method further includes (d) periodically coupling and decoupling a resistive element in parallel with the coil while performing (a)-(c), and (e) deriving a signal based upon the control signal. The derived signal is indicative of a difference between first and second values of an intermediate signal functionally related to the control signal, which are obtained when the resistive element is coupled in parallel with the coil and decoupled, respectively.